

WHAT IS CLAIMED IS:

1. A prosthetic liner of generally tubular shape having a rounded, closed distal end and an open proximal end for receiving a residuum, comprising:

- a distal attachment plate secured to said prosthetic liner at a distal end thereof;
- a plurality of elongate arms extending from said distal attachment plate in a distal-to-proximal direction;
- said elongate arms being circumferentially spaced apart with respect to one another;
- said elongate arms being flexible in a radially inward and radially outward direction with respect to a longitudinal axis of said prosthetic liner; and
- said elongate arms being formed of a predetermined material that is substantially nonstretchable in an axial direction;

whereby bending of the prosthetic liner in an anterior region thereof is not restricted by said elongate arms;

whereby said elongate arms and said distal attachment plate collectively spread the weight of a prosthesis attached to said distal attachment plate over substantially all of an inner surface area of said prosthetic liner, said inner surface area being sufficiently large to reduce a negative pressure in pounds per square inch exerted by said prosthesis during the swing phase of a gait to a sufficiently low negative pressure to substantially prevent milking of a residual limb.

2. The prosthetic ^{apparatus} liner of claim 1, wherein said elongate arms are formed integrally with said distal attachment plate and extend to a length substantially equal to about one-half the length of the prosthetic liner.

a 3. The prosthetic ^{apparatus} ~~liner~~ of claim 1, wherein said elongate arms are separately formed relative to said distal attachment plate and extend to a length substantially equal to about one-half the length of the prosthetic liner.

a 4. The prosthetic ^{apparatus} ~~liner~~ of claim 1, wherein said elongate arms are separately formed relative to said distal attachment plate and are mounted about a peripheral edge of said distal attachment plate in circumferentially spaced relation to one another and wherein said elongate arms extend substantially the entire length of said prosthetic liner.

a 5. The prosthetic ^{apparatus} ~~liner~~ of claim 1, wherein said distal attachment plate includes a base and a neck, said base being secured to said prosthetic liner and said neck protruding outwardly therefrom, and wherein an elongate arm has a central opening formed therein, said central opening receiving said neck and opposite ends of said elongate arm being secured to an external surface of said prosthetic liner.

a 6. The prosthetic ^{apparatus} ~~liner~~ of claim 1, wherein said predetermined material is silk so that it is easily cuttable and so that no abrading edge is created when it is cut, whereby the prosthetic liner may be cut to size as desired to fit a residuum.

a 7. The prosthetic ^{apparatus} ~~liner~~ of claim 1, wherein the predetermined material is fiberglass cloth.

a 8. The prosthetic ^{apparatus} ~~liner~~ of claim 1, wherein the predetermined material is a carbon fiber.

a 9. The prosthetic ^{apparatus} ~~liner~~ of claim 1, wherein the predetermined material is a synthetic material.

apparatus

a 10. The prosthetic ~~liner~~[^] of claim 1, wherein the predetermined material is a metallic open mesh screen material.

apparatus

a 11. The prosthetic ~~liner~~[^] of claim 1, wherein the predetermined material is a plastic open mesh screen material.

apparatus

a 12. The prosthetic ~~liner~~[^] of claim 1, wherein said elongate arms are formed of differing predetermined materials where one of said predetermined materials underlies the other of said predetermined materials.

apparatus

a 13. The prosthetic ~~liner~~[^] of claim 1, wherein the predetermined material is an epoxy that is nonstretchable after curing, said epoxy disposed in equidistantly and circumferentially spaced apart elongate strips to an external surface of said prosthetic liner.

apparatus

B a 14. The prosthetic ~~liner~~[^] of claim ~~12~~¹³, wherein said strips of epoxy are disposed on a prosthetic liner formed of a material that is stretchable in a radial and longitudinal direction so that said epoxy, when cured, prevents stretching of said material in a longitudinal direction and allows stretching of said material in a radial direction.

apparatus

a 15. The prosthetic ~~liner~~[^] of claim 1, wherein said elongate arms are provided in the form of seams formed by sewing, said seams extending substantially the entire longitudinal extent of said prosthetic liner.

Sub 226 16. A prosthetic liner of generally tubular shape having a rounded, closed distal end and an open proximal end for receiving a residuum, comprising:

a plurality of elongate arms extending from said closed distal end in a distal-to-proximal direction;

said elongate arms being circumferentially spaced apart with respect to one another;

said elongate arms being flexible in a radially inward and radially outward direction with respect to a longitudinal axis of said prosthetic liner;

said elongate arms being formed of a predetermined material that is substantially nonstretchable in an axial direction; and

said elongate arms being embedded within said prosthetic liner.

17. A prosthetic liner of generally tubular shape having a rounded, closed distal end and an open proximal end for receiving a residuum, comprising:

a plurality of elongate arms extending from said closed distal end in a distal-to-proximal direction;

said elongate arms being circumferentially spaced apart with respect to one another;

said elongate arms being flexible in a radially inward and radially outward direction with respect to a longitudinal axis of said prosthetic liner;

said elongate arms being formed of a predetermined material that is substantially nonstretchable in an axial direction; and

said elongate arms being secured to an exterior surface of said prosthetic liner.